feeding devices, each having a yarn stopping accessory device. Furthermore, a further accessory device in the form of a so-called winding count sensor (not shown) is arranged at each yarn feeding device which sensor counts during each insertion a withdrawn yarn winding and generates at least one signal then. A magnet is arranged within the yarn stopping accessory device for lifting a not shown yarn stopping pin out of the yarn path. The stopping pin can be returned from the lifted position again into the lowered position by spring load or by the magnet, respectively. In the lowered position of the yarn stopping pin the yarn withdrawal is interrupted. In the lifted position of the yarn stopping pin the yarn windings are withdrawn one by one by the air jet weaving machine.

An insertion in the yarn channel occupied by the yarn feeding device F3 is controlled and monitored as follows:

1. The air jet weaving machine sends a message via the field bus FB (e.g. a CAN-bus) which associates the function for a trig signal to the event line EL. This means that the subsequent event signal will be a trig signal for a certain event, namely for lifting the yarn stopping pin in the yarn feeding device F3.

2. In the next moment the next sent e.g. CAN-message defines the yarn feeding device F3 in the yarn processing system. The message gives the order that the magnet has to lift the yarn stopping pin x milliseconds after the occurrence of the subsequent event signal in the event line. Consequently, this event signal will be the trig signal according to 1.

3. As soon as the event signal is transmitted via the event line EL, the event or the function according to 2. will be carried out, as soon as x milliseconds have expired.

4. The next e.g. CAN-message associates winding counting pulses from the yarn feeding device F3 to the event line EL. During withdrawal of the yarn the winding count accessory device generates yarn winding pulses which are sent by the yarn feeding device F3 into the event line EL. These yarn winding pulses are monitored and registered by the main control MCU of the air jet weaving machine.

5. After a predetermined, correct number of yarn winding off pulses originating from the yarn feeding device F3 have been monitored and counted, a new sent e.g. CAN-message will associate the event line EL again to a trig signal.

6. The next following e.g. CAN-message defines for the yarn feeding device F3 that the accessory device of the yarn feeding device F3 has to lower or close of the yarn stopping pin y milliseconds after the occurrence of the next following event signal in the event line as the event. This event then will be the trig signal according to 5.

7. Immediately after this point in time the yarn feeding control FC in the yarn feeding device F3 reads the incoming event signal in the event line EL as a trig signal. The yarn withdrawal is terminated in accordance with the condition defined in 6, i.e., as soon as y milliseconds have expired upon occurrence of the event signal. One cycle of the weft yarn insertion (one pick) then has taken place in the correct fashion and with a proper timing.

In the yarn processing system in Fig. 2 an air jet weaving machine is indicated as the textile machine M to which at least two yarn feeding devices F1, Fn are associated in separated yarn channels. The air jet weaving machine has a weaving shed 1, an insertion and yarn selecting assembly 2, and a main shaft 3, of which the rotational angle ranges or rotational angles are monitored in coded fashion by the main control MCU. Furthermore, e.g. at the side of the weaving shed remote from the yarn feeding devices an accessory device A in the form of an arrival sensor is provided which confirms the arrival of the free weft yarn tip e.g. by an okay signal and/or which generates a fault signal in case that the free tip of the weft yarn has not arrived at a predetermined point in time or within a predetermined time window, respectively.

Each yarn feeding device F1, Fn is a so-called weft yarn measuring feeding device which measures the weft yarn length for each insertion. A housing 4 supports a storage drum 5. Furthermore, at the inlet side an accessory device E in the form of a yarn breakage detector or yarn run detector is provided and connected to the yarn feeding device control FC. Furthermore, a yarn stopping accessory device D is provided and connected to the yarn feeding device control FC. Finally, even an accessory device B in the form of a yarn winding count sensor may be oriented the storage drum 5 which sensor generates at least one count signal for each withdrawn winding and transmits the

count signals to the yarn feeding device control FC. The accessory device D has at least one magnet by which a yarn stopping pin can be lifted from a lowered stopping position (stopping the yarn against withdrawal) into a release position (releasing the yarn for withdrawal), and which then can be returned.

At the withdrawal side of the yarn feeding device an accessory device G in the form of a yarn stretcher may be provided which, in some cases, may be connected to the yarn feeding device control FC. In the further course of the yarn path an accessory device H in the form of a controlled yarn brake having an individual accessory device control AC may be provided. Furthermore, a weft yarn monitor may be arranged as an accessory device K within the yarn path.

Each yarn feeding device F1 to Fn pulls off yarn from a storage bobbin 7 provided in a storage bobbin stand 6. At the stand, as well, accessory devices (not shown) may be provided for monitoring and/or controlling certain functions.

A serial communication system in the form of a field bus system FBS interconnects the main control MCU and the yarn feeding devices F1, Fn by means of at least one field bus FB. The yarn feeding device controls FC either are connected directly to the field bus FB (not shown), or, as shown, via a so-called yarn feeding device control box FCB. Even the stand 6, the accessory devices H, K and in some cases the accessory device A may be connected to the field bus FB. For such purposes nodes are provided which have predefined addresses.

Accessory devices associated to at least one respective yarn feeding device may be connected to the respective yarn feeding device control FC. Accessory devices associated to the textile machine, to the contrary, may be connected to the main control MCU. The field bus system FBS contains at least one common field bus driver FBD by which the transmission of messages NES is carried out in both transmission directions within the field bus system FBS.

Separate from the field bus system FBS one event line EL is arranged in a multi-drop structure, to which different communication participants of the field bus system FBS are connected. The event line EL serves for the transmission of event signals ES at the correct time or in real time, respectively, and selectively in each transmission direction. In this case the event signals ES may be relatively simple signal pulses. The feeding

device controls FC are directly connected to the event line EL, while the accessory devices E, D, B, G are connected to the event line EL via the feeding device controls FC. Differently, the accessory devices H, K, A and also the main control MCU, are directly connected to the event line EL. Even not shown accessory devices at the stand 6 may be connected to the event line EL.

In a not shown alternative individual point-to-point-event lines may be provided to the respective communication participants in the field bus system FBS. Then each event line is equipped with an individual event signal driver ELD.

An insertion cycle for one weft yarn of the yarn feeding device F1 is controlled and monitored in the fashion as explained with the help of Fig. 1. The further accessory devices are controlled and/or monitored in analogous fashion.

The indirect definition of an event signal which will be generated in the form of a fault signal from the accessory device A (arrival sensor) in case of a not arriving weft yarn is carried out e.g. in the following way:

The main control MCU is informed by the yarn winding count pulses about the movement of the weft yarn through the weaving shed. The point in time of or a time window for the arrival of the free weft yarn tip at the accessory device A is known. By a corresponding message NES in the field bus system FBS e.g. after receipt of the first yarn winding count pulse it is defined that an event signal transmitted at the predefined point in time or within the predefined time window will be a fault signal from the accessory device A and will have the consequence that the weaving machine has to be switched off. In case that the event signal is transmitted at the predefined point in time or within the predefined time window, the main control MCU will switch off the weaving machine.

In a similar way an event signal transmitted during an insertion cycle from a weft yarn monitor (accessory device K) will be recognised as representing the event of a yarn breakage or a yarn stop caused by a fault and will be registered such that at least the weaving machine will be switched off.

In this case e.g. the signal of the weft yarn monitor upon start of the yarn within a time window will be defined via the field bus system as an expected event signal from the node addressed to the main control MCU. Furthermore, the consequence of the receipt

of this event signal will defined. In case that the event signal will be received as an okay signal, nothing will be done. In case that the event signal does not arrive, a determination is made that a yarn breakage has occurred, and the machine will be switched off. As a definition also an inquiry for at least one event signal may be carried out at the predetermined point in time or within a time window, respectively.

The activation or deactivation or adjustment of the accessory device H e.g. is made by communicating the message via the field bus system FBS that the next following event signal is intended for the node address of the accessory device H only and has to be ignored by all other communication participants.

In a very complex system a point-to-point-structure of several event lines may be more expedient in order to allow to handle as many as possible event signals at the appropriate time.

In the case of a rapier weaving machine as the textile machine of the yarn processing system, e.g. the controlled yarn brake is actuated as the accessory device by defining by the node address of the yarn feeding device control of the operating yarn channel or by the node address of the controlled yarn brake in the field bus system at which point in time the respective event signal for the activation will arrive and at which point in time the event signal for the deactivation of the controlled yarn brake will arrive. In this case the points in time or the time windows e.g. are associated to the rotational angle of the main shaft of the weaving machine by calculations or the like and also the event signals will be transmitted depending therefrom. In this way it is assured that the yarn tension will be increased accordingly when the bringer gripper grips the yarn, so that then the yarn tension will be decreased, so that the yarn tension again will be increased, as soon as the bringer gripper transfers the yarn to the taker gripper, and so that the yarn tension again will be decreased after the transfer.

In case of a projectile weaving machine the controlled yarn brake similarly will be activated and deactivated by using respective event signals. In this case the purpose and the point in time or the time window of the event signals are transmitted in advance to the respective correct addresses by messages within the field bus system.

In a similar way also in other yarn processing systems which e.g. include a knitting machine and knitting yarn feeding devices associated to the knitting machine and, in

some cases, accessory devices, may be controlled and/or monitored with event signals the meaning of which will be respectively defined via the field bus system.